

#### ABSTRACT OF THE DISCLOSURE

A method of removing contaminants from a silicon wafer after chemical-mechanical polishing (CMP). After a copper chemical-mechanical polishing and a subsequent barrier chemical-mechanical polishing operation, an aqueous solution of ozone in de-ionized water is applied to clean the silicon wafer so that contaminants on the wafer are removed. Alternatively, an ozone/de-ionized water buffer-polishing process is conducted after copper and barrier CMP and then the wafer is cleaned using a chemical solution or de-ionized water. Alternatively, an ozone/de-ionized water buffer-polishing process is conducted after both copper-CMP and barrier-CMP and then the wafer is cleaned using a chemical solution or de-ionized water.